

A<sup>7</sup>  
could.  
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at least one base bleed nozzle through which combustion products of said base bleed propellant pass.--

#### REMARKS

Claims 1-7 stand rejected in the outstanding Official Action. Claims 1 and 7 have been amended and newly written claims 8 and 9 offered for consideration. Accordingly, claims 1-9 remain in this application.

The Examiner's consideration of the prior art forwarded by Applicant in the Information Disclosure Statement filed September 26, 1997 is very much appreciated.

Claims 1-7 stand rejected in the outstanding Official Action under 35 U.S.C. §112, second paragraph, as being indefinite. Specifically, the Examiner objects to the phrase "adapted to" in line 10 of claim 1 and in line 2 of claim 3 alleging that this term is vague and indefinite. Applicant respectfully traverses this contention. Furthermore, this issue has been previously considered by the Court of Customs and Patent Appeals, the predecessor to the Court of Appeals for the Federal Circuit, wherein the court held that the language "members adapted to be positioned" serves "to precisely define present structural attributes of interrelated component parts of the claimed assembly." Quoting from Manual of Patent Examining Procedure (MPEP) Section 2173.05(g) which in turn cites *In re Venezia*, 189 USPQ 149 (CCPA 1976). Applicant's use of the phrase "adapted to" is in precisely the same manner as that considered to be definite by both the authors of the Manual of Patent Examining Procedure and the Court of Customs and Patent Appeals. It is submitted that the

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use of this term is appropriate in Applicant's claims 1 and 3 and any further objection thereto is respectfully traversed.

The Examiner's suggestion that claim 1 is vague and indefinite and allegedly not reciting sufficient structural support for the functional language in lines 10-13 is respectfully traversed. Applicant has modified the language somewhat to more positively recite the attributes of the propellant support, i.e., that it is "adapted to prevent substantial movement...." This language is clearly definite and one of ordinary skill in the art would clearly understand the sizing and strength requirements of the propellant support needed to accomplish these functions. Accordingly, these limitations in claim 1 are believed to positively recite the structural limitations necessary to define Applicant's invention and interrelationships of the claimed elements. Any further objection or rejection of claims 1-7 under the provisions of 35 U.S.C. §112, second paragraph, is respectfully traversed.

Claims 1-3 stand rejected under 35 U.S.C. §102(b) as anticipated by one of Dimond (U.S. Patent 3,434,419, Swedish Patent 124,185 or British Patent 676,368. It is noted that Applicant's original claim 1 recited a "plenum chamber located at one end of the combustion chamber" and required a "propellant support located between the propellant and the plenum chamber." If the Examiner considers plate 36' in Dimond as the propellant support (as contended in the Official Action), there is no plenum chamber located at one end of the combustion chamber nor is there a propellant support located between the propellant and the plenum chamber, both limitations being required by Applicant's original claim 1.

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Accordingly, Dimond simply does not disclose the structure or the structural interrelationship of Applicant's claimed invention.

The Swedish patent has been translated by Applicant and a copy of the translation is enclosed herewith. It is first noted that the Swedish patent bears no relationship to a long range artillery shell and instead is directed towards an operator-adjusted rocket motor. The adjustment to the rocket motor is control piston 8 which is supported by hemispherical plate 5 welded into position within the rocket motor nozzle. The extent to which the nozzle is occluded by piston 8 is operator-adjustable.

Applicant's claim has been amended to positively recite not only that it is a long range artillery shell, but also that, in addition to including a combustion chamber, a rocket nozzle and rocket propellant, the claim positively recites a plenum chamber separated from the rocket propellant by a propellant support. It will be seen in Applicant's figures that a plenum chamber 8 is provided and separated from the propellant 9 by propellant support 11 and 12 in a preferred embodiment. There is no equivalent structure to the plenum 8 in the Swedish rocket.

Additionally, Applicant has positively recited the ignition delay mechanism necessary in the long range artillery shell claimed but completely unnecessary in the rocket motor disclosed in the Swedish reference. Moreover, it will be appreciated that if the Swedish rocket were launched by an artillery system, the rocket motor nozzle flange 2 would be crushed by the forces of acceleration. The Swedish rocket motor is simply incompatible with the long range artillery shell set out in Applicant's claim 1.

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British Patent '368 is also a rocket and does not include any structure permitting launch by means of an artillery piece. It is noted that the fragile nature of the nozzle exit would, like the Swedish reference, be crushed under the acceleration loads of an artillery shell.

More importantly, the Examiner's contention that vanes or fins 4 would serve to support the propellant during the acceleration loads encountered by an artillery launch is simply not credible. To the extent that the propellant is supported at all by the fins 4, it would most probably be extruded through the fins and at least a portion would leave through the open rocket nozzle. Further, because the British Patent '368 missile does not anticipate launch by an artillery piece, it has no provision for a rocket motor ignition delay mechanism as positively recited in Applicant's amended claim 1. Accordingly, and for many of the same reasons as the Swedish reference is distinguished, the British Patent '368 does not anticipate nor render obvious Applicant's claimed combination of elements.

Claims 1-6 also stand rejected under 35 U.S.C. §103 as unpatentable over Olstein (U.S. Patent 3,404,532) in view of Burney (U.S. Patent 2,489,953). The Examiner's admission that "Olstein does not disclose the specifically claimed propellant support" (Official Action, page 2) is very much appreciated. However, it should also be noted that without the support, there is no plenum chamber located at one end of the combustion chamber. The Examiner's admission that Olstein fails to disclose the claimed plenum chamber is also respectfully requested. Otherwise, Olstein appears to disclose a conventional rocket boosted artillery projectile. Olstein is specifically directed towards finding a reliable

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delay mechanism for the implementation with a single nozzle that does not have the disadvantages of a discarded mechanism (column 1, lines 37-48).

Olstein's problem is solved by having a particular nozzle design which initially allows the ignition charge through a channel but once the rocket propellant is ignited, the channel is effectively sealed allowing the nozzle to function as a typical rocket outlet nozzle. Olstein discloses a nozzle closure structure 24 which would be necessary in order to prevent early ignition of the rocket propellant by the artillery launch gases. The Burney reference is concerned with mitigating the effect of large launch acceleration forces. The Examiner has not indicated how or why one of ordinary skill in the art would look to either the Olstein or Burney references to solve the problems of the presently claimed invention. In order to combine the Burney disclosure, the Examiner must pick and choose elements of the Burney reference and ignore the other elements, i.e., he must pick the propellant support and the plenum chamber while ignoring the fact that Burney is not an "end-burn configuration", and requires multiple rocket motors and/or complex nozzle designs disclosed in the drawings.

The Court of Appeals for the Federal Circuit has recently held in the case of *In re Rouffet* (Appeal No. 97-1492 decided July 15, 1998) that "the Examiner must show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed. There is no indication that Burney or Olstein are attempting to solve the same problems as the claimed invention nor that one of ordinary skill in the art would be motivated to pick and choose the various components.

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Accordingly, claims 1-6 are believed to be clearly patentable over the combination of Olstein in view of Burney and any further rejection thereunder is respectfully traversed.

Claim 7 stands rejected as unpatentable over the Olstein/Burney combination further in view of French Patent 2,522,134. Inasmuch as claim 7 has been amended to depend from claim 6, the above arguments distinguishing claim 6 over the Olstein/Burney combination are herein incorporated by reference. The Examiner's admission that Olstein and Burney do not disclose a base bleed system is very much appreciated. While the French patent indeed teaches a base bleed system, the Examiner has provided no teaching or reason apparent from art of record indicating that the French patent is directed towards the problem solved by Applicant's invention. Thus, there is no reason why one would review the French reference, let alone pick and choose elements and combine them with the alleged combination of Olstein and Burney. There is simply no disclosure for the combination of Olstein, Burney and the French patent and any further rejection thereunder is respectfully traversed.

Applicant also includes newly written claims 8 and 9 similar in scope to Applicant's claim 1 but directed to the preferred embodiments of a base bleed system and the details of the nozzle plug/delay mechanism. Consideration of these newly written claims would be appreciated.

Having responded to all objections and rejections set forth in the outstanding Official Action, it is submitted that claims 1-9 are in condition for allowance and notice to that effect is respectfully solicited. In the event the Examiner is of the opinion that a telephone or

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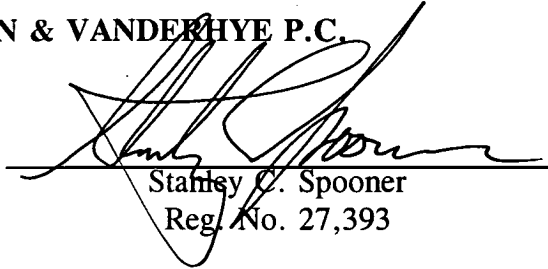
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personal interview will facilitate allowance of one or more of these claims, he is respectfully requested to contact Applicant's undersigned representative.

Respectfully submitted,

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Attachment: Translation of Swedish Patent 124,185

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